Appl. No. 10/812,537
Amdt. dated September 8, 2005
Preliminary Amendment

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## Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

## Listing of Claims:

1.      (currently amended)  A <u>first</u> storage subsystem <u>to be coupled to an external device, the first storage subsystem</u> comprising:

<u>a first storage volume configured by at least one of first storage devices in the first storage subsystem;</u>

<u>a second storage volume configured by at least one of second storage devices in a second storage subsystem coupled to the first storage subsystem; and</u>

a controller ~~having a plurality of ports~~ <u>configured to manage the first storage volume and the second storage volume as a virtual volume;</u>

~~a plurality of storage devices configured store information;~~

~~a lock table including attribute information and retention information for each of a plurality of storage volumes presented to a host device, the plurality of storage volumes including a non-virtual volume that maps to a first storage device of the storage subsystem and a virtual volume that maps to a second storage device of an associated storage subsystem, the associated subsystem being linked to the storage subsystem via a communication link,~~

wherein the controller ~~is configured to receive and process a request from a host to modify an attribute of the virtual volume~~ <u>issues a lock request to the second storage subsystem when the controller receives a request from the external device to change an attribute of the second storage volume to write protect state.</u>

2.      (currently amended)  The <u>first</u> storage subsystem of claim 1, wherein the [[lock table]] <u>external device</u> includes a ~~permission field and a retention period field~~ <u>host device</u>.

3.      (currently amended)  The <u>first</u> storage system of claim 1, <u>further comprising:</u>

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a lock table including attribute information for each of the first storage volume and the second storage volume;

wherein the controller ~~includes a locker module that process the request from the host to modify the virtual volume that is located in the associated subsystem~~ is configured to manage the attribute information of the first storage volume and the second storage volume based on the lock table.

4.      (currently amended)  The first storage system of claim 3, wherein the ~~locker module sends a request to modify the attribute of the virtual volume to a locker module of the associated subsystem~~ lock table includes a retention period for at least one of the first storage volume and the second storage volume; and

wherein the attribute assigned to the at least one of the first storage volume and the second volume cannot be changed within the retention period.

5.      (currently amended)  A method for managing a storage system, comprising:

presenting a plurality of storage volumes to a host via a first storage subsystem, the plurality of storage volumes including a [[non-virtual]] first storage volume that maps to a storage area within the first storage subsystem and a [[virtual]] second storage volume that maps to a storage area within a second storage subsystem that is different from the first storage subsystem;

receiving at the first storage subsystem a first request from [[a]] the host to modify an attribute of a target storage volume, the target storage volume being one of the plurality of storage volumes presented to the host; and

sending a second request from the first storage subsystem to the second storage subsystem if the target volume is determined to be the [[virtual]] second storage volume, the second request being a request to modify the attribute of the target volume.

6.      (currently amended)  The method of claim 5, further comprising:

modifying the attribute of the target volume by a controller of the second storage subsystem according to the second request.

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7.      (currently amended)  The method of claim 6, further comprising:

sending a first report of the attribute modification from the second <u>storage</u> subsystem to the first <u>storage</u> subsystem; and

sending a second report of the attribute modification from the first <u>storage</u> subsystem to the host.

8.      (currently amended)  The method of claim 5, further comprising:

modifying the attribute of the target volume by a controller of the first <u>storage</u> subsystem if the target volume is the [[non-virtual]] <u>first storage</u> volume.

9.      (currently amended)  The method of claim 8, wherein the first <u>storage</u> subsystem includes a first locker module to process the first request from the host, and the second <u>storage</u> subsystem includes a second locker module to process the second request from the first <u>storage</u> subsystem.

10.      (original)  The method of claim 5, wherein the first request is a request to lock the target volume to grant only read access to the target volume.

11.      (original)  The method of claim 10, wherein the second request is a request to lock the target volume to grant only read access to the target volume.

12.      (original)  The method of claim 10, wherein a lock table associated with the target volume is updated once the attribute of the target volume has been modified.

13.      (original)  The method of claim 12, wherein the lock table includes an attribute field and a retention period field.

14.      (original)  The method of claim 13, wherein the attribute of the target volume cannot be modified if a retention period associated with the retention field for the target volume is not expired.

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15.     (currently amended)  The method of claim 5, wherein the first and second <u>storage</u> subsystems are disk array units.


16.     (currently amended)  A computer readable medium including a computer program for managing a storage subsystem, the computer program comprising:

code for presenting a plurality of storage volumes to a host via a first storage subsystem, the plurality of storage volumes including a [[non-virtual]] <u>first storage</u> volume that maps to a storage area within the first storage subsystem and a [[virtual]] <u>second storage</u> volume that maps to a storage area within a second storage subsystem that is different from the first <u>storage</u> subsystem;

code for receiving at the first <u>storage</u> subsystem a first request from [[a]] <u>the</u> host to modify an attribute of a target storage volume, the target storage volume being one of the plurality of storage volumes presented to the host; and

code for sending a second request from the first <u>storage</u> subsystem to the second <u>storage</u> subsystem if the target volume is determined to be the [[virtual]] <u>second storage</u> volume, the second request being a request to modify the attribute of the target volume.


17.     (original)  The computer program of claim 16, wherein the computer readable medium is provided in a storage subsystem.


18.     (new)  A first storage subsystem coupled to a second storage subsystem, which stores data written by a host device, the second storage subsystem presenting at least one storage volume as a storage resource to the first storage subsystem, the first storage subsystem presenting at least one virtual volume as a storage resource to the host device, the first storage subsystem comprising:

a first storage volume configured by at least one of first storage devices in the first storage subsystem; and

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a controller being configured to manage the first storage volume and a second storage volume configured by at least one of second storage devices in the second storage subsystem as the at least one virtual volume;

wherein the controller issues a lock request to the second storage subsystem when the controller receives a request from the host device to change an attribute of the second storage volume to write protect state.